

Lead Safety Lesson Guide #8



OBJECTIVES: *Upon completion of this topic you will be able to:*

- Identify the Lead Control Program elements.
- Describe workplace control practices.
- Identify lead warning signs and labels.
- Describe the medical surveillance program.
- Define the written compliance plan.

Background

A Few Facts about Lead

- In use for thousands of years
- Toxic to the human body
- Enters the body through inhalation and ingestion
 - Can affect the blood, kidneys, nervous system, and reproductive system
 - May adversely affect the fetus of a worker exposed to lead

Where is Lead Found Aboard Ship?

- Good question. It can be found in:
 - Lead-based paint
 - Ballast & radiation shielding
 - Pipe joints
 - Cable shielding
 - Ammunition
 - Batteries
 - Weights and cable sockets

How can I be exposed to Lead?

- Glad you asked. You can get it through
 - Grinding
 - Sanding
 - Spraying
 - Burning
 - Melting
 - Soldering
 - Machining
 - Handling contaminated protective clothing

The Greatest Hazard

- Comes from lead dust
- Can be easily inhaled or ingested
- Ingestion occurs when personnel eat, drink, smoke, or apply cosmetics without first washing the dust from their hands
- Exposure eliminated through good work practices, good hygiene and respiratory protection

The Lead Control Program

Program Elements

- Industrial Hygiene Survey
 - To pinpoint areas & processes of potential exposure
- Control of lead in the workplace environment
 - Through good work practices and protective equipment
- Waste disposal procedures
 - To protect the environment

Program Elements

- Medical surveillance
 - To detect signs of lead poisoning through blood tests and examinations
- Written compliance plan
- Worker and supervisor training

Industrial Hygiene Surveys and Workplace Controls

Industrial Hygienists & Surveys

- Shall evaluate all workplaces where lead is used
- Where exposure potentials exist, exposure monitoring plans shall be established
- Shall identify need for written lead hazard compliance plan and provide content for the plan
- Notification of exposure monitoring results

Workplace Control Practices

- Main goal--prevent lead from entering the body
 - Substitute (use non-lead paint)
 - Keep mechanical grinding to a minimum
 - **Use authorized chemical strippers**
 - **Equip tools with HEPA-filtered exhaust**
 - Minimize heating of leaded materials
 - **Keep below 600° F**

More Control Practices

- Maintain work surfaces as free of lead dust as possible
 - Use HEPA vacuums and wet methods
- Handle lead waste materials in accordance with Chapter 21 of OPNAVINST 5100.23 (series)
- Isolate hot work on lead from other operations

More Control Practices

- Use local exhaust ventilation
- Wear protective clothing if possibility of skin or eye irritation exists
- Wear approved respirators if exposure likely to exceed Permissible Exposure Limit (PEL)

Signs and Labels

- Post warning signs at locations where concentrations may exceed PEL
- Use caution labels on containers of lead-contaminated materials

Lead Warning Sign



Lead Caution Label



Housekeeping and Personal Hygiene

- Housekeeping
 - Maintain surfaces free of lead accumulation
 - Use HEPA vacuums & wet methods
 - DO NOT use compressed air for cleaning
- Personal Hygiene
 - Eating, drinking, smoking, chewing, and applying cosmetics prohibited
 - Storage of food and tobacco products in lead areas prohibited

Environmental Protection and Waste Disposal

Waste Disposal Procedures

- Lead-containing waste materials are considered hazardous material (HM)
- Handle in accordance with Chapter 21
- Bag lead waste in impermeable containers
- Label bags/containers with caution labels
- Label bags/trash cans as “Lead Waste Only”

Medical Surveillance Program

Getting Examined

- Consists of:
 - Preplacement medical evaluation
 - Blood lead monitoring
 - Follow-up evaluation, based on:
 - Results of blood lead analysis
 - Worker complaint
 - Physician opinion

Important Note

Inclusion in the program is based on measured airborne concentrations without regard to respirator use, and therefore does not indicate that an individual is overexposed to lead

How Can Lead Affect My Health?

- Absorbed into the blood stream and affects blood, kidneys, nervous system, and immune system
- Symptoms of lead poisoning include
 - Colic pains
 - Bluish spots on the gums
 - Weakness
 - Constipation
 - Paralysis on hands and forearms

More Health Effects

- Other chronic effects may include convulsions and permanent nervous system disorders
- In pregnant women, lead may cause fetal damage including:
 - Premature birth
 - Smaller babies
 - Decreased mental ability in the infant
 - Increased possibility of spontaneous abortion

Written Compliance Plan

The Plan Must Include

- Description of each operation in which lead is emitted
- Description of specific means that will be employed to achieve compliance
 - Engineering plans and studies
 - Other methods for controlling exposures
- Report of the technology considered in meeting the PEL

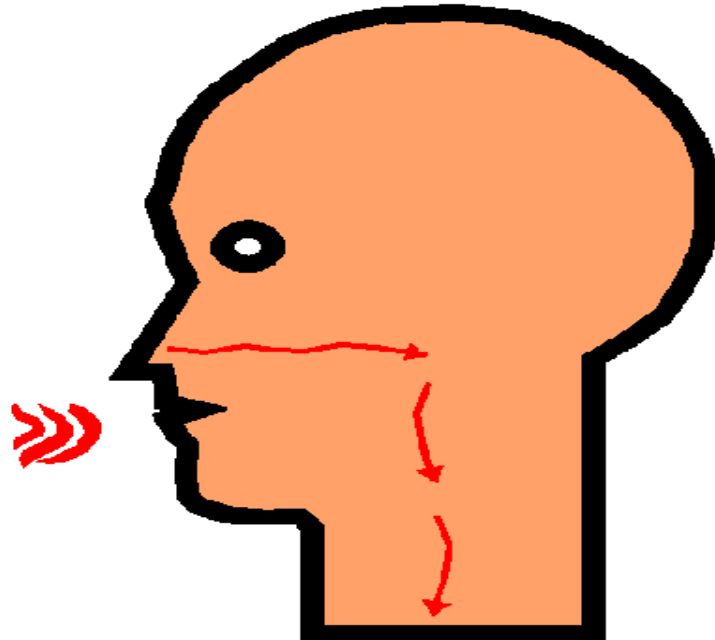
The Plan Must Include

- Air monitoring data to identify source of lead emissions
- Detailed schedule for implementation of lead program
- Work practice program
- Administrative control schedule, if applicable
- Any other relevant information

Review and

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